$$V(b,i) = \begin{cases} E(b,i), & b = e \\ M(b,i), & b = 3 \vee t \vee d \ \ https://www.overleaf.com/project/6425b7f724296e65f98d45d7 \\ I(b,i), & b = h \vee p \vee c \end{cases} \tag{1}$$

$$E(b,i) = \begin{cases} 1 + V(b+1,\emptyset), & b = e \wedge i = \emptyset \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,h)) & b = e \wedge i = h \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,p)) & b = e \wedge i = p \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,c)) & b = e \wedge i = c \end{cases} \tag{2}$$

$$M(b,i) = \begin{cases} Fill3 & b = 3 \\ FillT & b = t \\ FillD & b = d \end{cases} \tag{3}$$

$$Fill3(b,i) = \begin{cases} \infty & b = 3 \wedge i = \emptyset \\ 4 + V(b+1,h) & b = 3 \wedge i = h \\ 5 + V(b+1,p) & b = 3 \wedge i = p \\ 6 + V(b+1,d) & b = 3 \wedge i = c \end{cases} \tag{4}$$

$$FillT(b,i) = \begin{cases} \infty & b = t \wedge i = \emptyset \\ \infty & b = t \wedge i = h \\ 5 + V(b+1,p) & b = t \wedge i = p \\ 6 + V(b+1,d) & b = t \wedge i = c \end{cases} \tag{5}$$

$$FillD(b,i) = \begin{cases} \infty & b = d \wedge i = \emptyset \\ \infty & b = d \wedge i = h \\ \infty & b = d \wedge i = p \\ 6 + V(b+1,d) & b = d \wedge i = c \end{cases} \tag{6}$$

$$I(b,i) = \begin{cases} FillH & b = h \\ FillP & b = p \\ FillC & b = c \end{cases} \tag{7}$$

$$FillH(b,i) = \begin{cases} min(1 + V(b+1,\emptyset), 3 + V(b+1,h)) & b = h \wedge i = \emptyset \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,h)) & b = h \wedge i = h \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,p), 3 + V(b+1,h)) & b = h \wedge i = p \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,c), 3 + V(b+1,h)) & b = h \wedge i = c \end{cases} \tag{8}$$

$$FillP(b,i) = \begin{cases} min(1 + V(b+1,\emptyset), 3 + V(b+1,p)) & b = p \wedge i = \emptyset \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,h), 3 + V(b+1,p)) & b = p \wedge i = h \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,p)) & b = p \wedge i = p \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,c), 3 + V(b+1,p)) & b = p \wedge i = c \end{cases} \tag{9}$$

$$FillC(b,i) = \begin{cases} min(1 + V(b+1,\emptyset), 3 + V(b+1,c)) & b = p \wedge i = \emptyset \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,h), 3 + V(b+1,c)) & b = p \wedge i = h \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,p), 3 + V(b+1,c)) & b = p \wedge i = p \\ min(2 + V(b+1,\emptyset), 3 + V(b+1,c)) & b = p \wedge i = c \end{cases} \tag{10}$$